Teranex Video Computer Installation and User Manual (VC-3)

Version 3 (Rev. 5)

VIDEO COMPUTER

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Contents

Section page

1 INTRODUCTION 1-1

2 MANUAL PURPOSE 2-1

3 WARRANTY 3-1

4 INJURY PRECAUTIONS 4-1

5 PRODUCT DAMAGE PRECAUTIONS 5-1

6 STANDARDS, CERTIFICATIONS AND COMPLIANCES 6-1

6.1 EMC STANDARDS 6-1
6.2 SAFETY STANDARDS 6-1
6.3 ELECTROMAGNETIC COMPATIBILITY DIRECTIVE 6-1

7 PACKAGING 7-1

8 UNPACKING 8-1

9 INSTALLATION 9-1

9.1 PRE-INSTALLATION 9-1
9.2 SITE REQUIREMENTS 9-1
9.2.1 Environmental 9-1
9.2.2 Electrical 9-1
9.3 MOUNTING 9-2
9.3.1 Rack Mounting 9-2
9.3.2 Desktop Placement 9-2
9.4 ELECTRICAL POWER CONNECTION 9-2
9.4.1 Standard IEC Connector 9-2
9.4.2 Voltage Ratings 9-2
9.5 OPERATION VIA REMOTE CONTROL 9-3
9.5.1 RS-232 Control 9-3
9.5.2 Ethernet Control (Optional) 9-3

10 SYSTEM OVERVIEW 10-1

10.1 PHYSICAL DESCRIPTION 10-1
10.2 INPUT & OUTPUT CONNECTION PANEL 10-2
10.3 INPUTS 10-2
10.4 OUTPUTS 10-3
10.5 REFERENCE INPUTS 10-3
10.6 CONTROL PORTS 10-3
10.7 GORGET BOARD 10-4
10.7.1 System Configuration Switches 10-4
10.7.2 DC Power Service Switch 10-4
10.7.3 Display Light Adjust 10-4
10.7.4 Power Supply Voltage LED's 10-4
10.8 SYSTEM CONFIGURATION 10-4

10.9 GRAPHICAL USER INTERFACE (GUI) 10-5
10.9.1 Touchscreen Information *10-5*
10.9.2 Cleaning the Display *10-5*

11 START-UP MENU 11-1

11.1 AUTOLOAD OF DEFAULT APPLICATION 11-1
11.2 START-UP MENU 11-1
11.3 ACCESS KEY ENTRY, EDITING AND DELETION 11-2
11.3.1 Access Key Entry & Editing *11-2*
11.3.2 Deleting a Key from the Database *11-3*
11.4 UPGRADE FROM CD 11-3
11.5 CALIBRATE TOUCH SCREEN 11-5
11.6 EDIT IP ADDRESS 11-5
11.7 DEMO MODE 11-5
11.8 SYSTEM INFO 11-6

12 SYSTEM SETUP MENU 12-1

12.1 KEYED PRODUCT OPTIONS 12-2
12.2 SET ETHERNET IP ADDRESS 12-2
12.3 CONVERSION DECISION LIST (OPTIONAL) 12-2
12.4 SYSTEM INFO 12-3
12.5 CALIBRATE TOUCH SCREEN 12-3
12.6 EXIT 12-3
12.7 "OK" BUTTON 12-3
12.8 GPI SETUP TAB 12-4
12.9 REFERENCE TAB 12-5
12.10 AUDIO TAB 12-6
12.10.1 Disable Audio Error Restart *12-6*
12.10.2 Input Source – SDI or AES *12-7*
12.11 TIMECODE TAB 12-8
12.12 DYNAMIC FILL SHADE TAB 12-9

13 USER PRESETS 13-1

13.1 STORING CURRENT CONFIGURATION 13-1
13.2 SAVE, RECALL OR RENAME A PRESET 13-2

1 Introduction

The Teranex Video Computer platform is a high-speed computing platform designed to accommodate numerous software applications, primarily for video image processing.

By providing a system that is updateable, upgradeable, expandable, adaptable and user-friendly, Teranex is setting a new performance standard for flexibility and cost effectiveness.

Current software applications offered by Teranex include:

Xantus – DTV Format and Standards Conversion

Xantus-one – Upconversion

Starfront – Pre-compression Processing and Noise Reduction

Star-up – Upconversion with Advanced Noise Reduction

2 Manual Purpose

This manual provides a reference guide for the Teranex Video Computer VC-3 (3-RU) chassis, and is written for use by qualified technicians and operators of television equipment.

Included is information concerned with the installation and operation of the Teranex Video Computer.

Refer to your software application user manual(s) for details of operation and for features specific to that application.

3 Warranty

The Teranex Video Computer includes a one-year warranty, which goes into effect from date of shipment and extends 12 months thereafter.

This warranty covers manufacturer's defects on parts and materials with Teranex's option of repairing or replacing any parts deemed or proved to be defective by Teranex during the warranty period.

Teranex will continue to support the unit with parts and service after expiration of the one-year warranty. The cost of repairs and shipping after the warranty expiration, however, are not covered.

This warranty does not cover any defects caused by abuse, improper use or care, accidents, or any type of system modification or repair by any individual or company other than an authorized Teranex representative or Teranex certified technician.

Teranex makes no other warranties, expressed or implied. Teranex's liability for any cause, including breach of contract, breach of warranty, or negligence, with respect to products sold by Teranex, is limited to repair or replacement by Teranex, at its sole discretion. This remedy is exclusive.

Under no circumstances shall Teranex be liable for any direct, indirect, special, incidental or consequential damages, including loss of profits irrespective of whether Teranex has advanced notice of the possibility of such damages.

Please see the Teranex Limited Warranty statement for complete warranty details.

4 Injury Precautions

WARNING!

If handled improperly, this unit can be hazardous under certain conditions. During servicing, this unit must be handled with care to avoid high voltage electric shock.

Below are precautionary measures that must be considered before operating the Teranex Video Computer.

☑ **Do Not Operate Without Covers**

To avoid electrical shock or fire hazard, do not operate this product without covers or panels properly attached to unit. Servicing should be performed by qualified personnel only.

☑ **Use Proper Power Cord**

To avoid fire hazard, use only the power cord supplied with this product.

☑ **Electrical Grounding**

To avoid electrical shock, please ensure the unit is properly grounded with the AC grounding conductor connected to a known electrical ground before making connections to the product's input or output terminals.

☑ **Do Not Operate in Wet or Damp Conditions**

To avoid electrical shock or fire hazard, do not operate this product in wet or damp conditions.

5 Product Damage Precautions

WARNING! - ***Turn off AC power to the chassis before removing or installing printed circuit assemblies, as this could result in serious damage to the unit's components.***

Below is a list of precautionary measures that must be considered before attempting to operate the Teranex Video Computer.

☑ **Use Proper Power Source**

Do not operate this product from a power source that supplies more or less than the voltage specified for this product.

☑ **Provide Proper Ventilation**

To prevent product overheating, provide proper ventilation and do not obstruct front and side ventilation areas of unit.

☑ **Do Not Operate With Suspected Failures**

If you suspect there is damage to this product, have it inspected by qualified service personnel. Do not attempt to repair the failure even if you suspect it may be a minor problem.

☑ **Use Power Cable Supplied (for USA ONLY)**

An AC power cord is supplied with a standard IEC molded free socket on one end and a standard 3-pin plug on the other.

6 Standards, Certifications and Compliances

The Teranex Video Computer has been tested and has been found to comply with the following CE, UL, FCC and TUV standards:

6.1 EMC standards

- EN 50081-1 - Generic emissions standard
- EN 55022/1998 - Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Class A
- EN 50082-1 - Generic immunity standard
- 47CFR Part 15, Subpart B 107(e) Class A
  109(g) Class A
- CISPR22(1997) Class A
- EN 61000-4-2 / 1995
- EN 61000-4-3 / 1995
- EN 61000-4-4 / 1995
- EN 61000-4-5 / 1995
- EN 61000-4-6 / 1996
- EN 61000-4-11 / 1994

6.2 Safety standards

- EN 60950 Safety of Information Technology Equipment, including electrical business equipment
- EN60950:1992 + A1:1993 + A2:1993 + A3:1995 + A4:1997 +A11:1997 NEMKO-TSE(74-SEC) 207/94 Low-Voltage Directive 73/23/EEC of February 19, 1973 as amended by 93/68/EEC.
- UL 1419 Safety requirements for mains operated electronic and related apparatus for household and similar general use.
- CSA C22.2 No. 1-94 - Safety requirements for audio, video and similar electronic equipment

6.3 Electromagnetic Compatibility Directive

These devices are for professional use only and comply with Part 15 of FCC rules. Operation is subject to the following two conditions:

1. These devices may cause interference to Radio and TV receivers in residential areas.
2. These devices will accept any interference received, including interference that may cause undesired operations.

7 Packaging

The Teranex Video Computer is shipped in a Teranex carton or crate, and should not be accepted if packaging is clearly damaged or does not clearly display the authorized company logo, name or materials.

Carefully open the carton and check for any obvious product damage incurred during shipping. If there is any damage to the product, please contact your carrier immediately. If there are any shortages from the packing list, please contact Teranex Customer Support immediately at 407-858-6000.

8 Unpacking

WARNING!

Two individuals are required to remove the unit from its shipping carton or crate. One person should be on each side of the unit.

Do not grasp the unit's front panel vent openings when removing the unit from its shipping carton or crate. This may result in damage the front panel of the unit.

1) Before opening the shipping case, position the case in a vertical manner where the opening of the case remains face up.
2) When removing the unit from its case, secure both hands (one person on either side) under the rack ears of the front panel where it screws into the base.
3) Carefully lift unit upward to remove and place horizontally on a flat surface.
4) Remove accessory box and chassis slide rail kit.
5) **Please retain the carton or crate** for use in the event that the unit must be returned to Teranex for repairs.

9 Installation

9.1 Pre-Installation

Warning!

These servicing instructions are for use by trained personnel only. To reduce the risk of electric shock, refer servicing to qualified personnel only.

Before mounting the VC-3 Video Computer, please verify that the circuit boards are seated correctly:

1. Loosen the two transit screws that secure the front panel.
2. To open the front panel, pull the panel forward and allow it to swing downward. This permits access to the main printed circuit boards.

Note:
In some cases, systems are shipped with desiccant packs installed inside the chassis. Please remove and discard them.

3. Verify that the circuit boards are properly seated. It is not necessary to remove card retaining brackets, however foam packaging materials, if present, should be removed.
4. Check that the modules and associated cables are secure.
5. Refit the front panel and secure the screws.

Note:
You must refit the two front screws that secure the front panel so that the unit will comply with applicable safety regulations and emission standards. These safety regulations require a method of preventing access by non-qualified personnel to circuitry.

9.2 Site Requirements

9.2.1 Environmental

The unit is cooled by forced air drawn in from the front of the machine, and expelled through vents on the left-hand side. Consequently, there must be free passage for airflow at the left side and front of the unit to allow for adequate ventilation. An ambient temperature should be maintained between 10 deg C (45 deg F) and 30 deg C (95 deg F) at a relative humidity of 10-90% (non-condensing).

9.2.2 Electrical

The rear panel is fitted with a standard IEC mains connector. A supply range of 110V to 240V, 47/63Hz, is required. (See illustration below.)

Note: *The power supply has an auto-detecting feature for the main power source. A voltage selector switch is not required.*

9.3 Mounting

9.3.1 Rack Mounting

The chassis is designed for mounting into a standard 19-inch (483mm) rack and occupies a vertical space of 3RU. A chassis slide kit is provided as standard accessory for easy installation into the rack opening. Adequate space is required behind the chassis for clearance for the connecting cables. The user may wish to remove the four plastic feet from the bottom of the chassis (if installed) before installation.

Warning!

Although the chassis is provided with standard front mounting ears for securing to the rack rails, it is required that suitable shelf supports or slides (supplied) be used. Failure to install suitable shelf supports or slides may result in equipment damage and/or personal injury.

9.3.2 Desktop Placement

The Video Computer is shipped with a set of plastic feet that may be attached to the bottom of the unit for use on a desk or table. If your installation will be on a desk or table, please screw the plastic feet into the bottom of the unit to protect the surface of the desk or table.

Warning!

Failure to use the plastic feet shipped on the unit may result in damage to the desk or table.

9.4 Electrical Power Connection

Warning!

The Teranex Video Computer must be grounded to avoid electrical shock. Failure to ground the unit may result in equipment damage and/or personal injury. Particular attention should be given to supply connections when connecting to power strips rather than direct connections to branch circuits.

9.4.1 Standard IEC Connector

The rear panel is fitted with a standard IEC connector for A.C. mains supply of 90-110V @60Hz or 220V @ 50Hz.

9.4.2 Voltage Ratings

The power supply automatically adjusts for 110V or 220V operation. A voltage selector switch is not required.

Warning!

To avoid electric shock, never remove the unit's covers. There are no user-serviceable parts inside. Refer servicing to qualified personnel. Failure to comply may result in equipment damage and/or personal injury.

9.5 Operation via Remote Control

9.5.1 RS-232 Control

Remote control is available via RS-232 protocol. To receive a copy of the Teranex Remote Control API document, please contact Teranex Customer Support.

9.5.2 Ethernet Control *(Optional)*

Teranex Remote Control Software is available as an option. Using the Ethernet port, you may control the GUI via a customer-supplied computer. The Remote Control Software allows the user to navigate the GUI screen using a mouse as a pointing device.

Requirements:
Teranex Remote Control Software is compatible with Windows NT, 2000, 98 and 95 Operating Systems. Users may connect an Ethernet crossover cable (RJ45) directly from their Windows machine to the back of the Teranex chassis, or may insert the unit within a network (consult your system administrator).

Instructions:
For detailed installation instructions, please see the documentation provided with the Teranex Remote Control Software CDROM, the Remote Control section of your user manual, or contact Teranex Customer Support.

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10 System Overview

10.1 Physical Description

The Teranex VC-3 Video Computer is a 3-rack unit (3RU), 19” rack mountable chassis. It is designed to permit flexibility in initial system hardware configuration, thereby permitting expansion to accommodate future needs.

The front panel of the unit contains an LCD touch-screen, which allows operation of the unit through a Graphical User Interface (GUI).

Two knobs to the right of the touchscreen offer additional control capability and can substitute functionally for the touchscreen “sliders” in most modes of operation. Each knob is a programmable rotary encoder that can be set independently in one of three modes of operation via GUI pull-down menus.

The three operational modes are:

Deprogrammed – The knob is disabled.

Follow Mode – The knob can be assigned ‘on the fly.’ When the user activates a slider control within one of the menus and then turns a knob, the knob becomes assigned to that function. If the user then selects another slider control and retouches the knob, the knob will be assigned to the new function.

Assigned – Locks a knob to a particular function (e.g.- Proc Amp Video Level). The knob retains this function even when the GUI screen is changed to another mode.

There are three LEDs (Light Emitting Diodes) to the left of the touchscreen that provide the following indications:

TOP LED	- GREEN	On: DC power supplies are ON Off: DC power supplies are OFF
MIDDLE LED	- GREEN	On: GUI active Off: GUI not active, or not yet loaded
BOTTOM LED	- RED	On: No output video present Off: Output video present

Two captive transit screws secure the front panel. Once the screws are loosened, the front panel easily slides forward and hinges down away from the unit, providing easy access to the circuit boards.

The rear panel of the unit displays a power switch and all input/output ports. (See below for rear panel view.)

10.2 Input & Output Connection Panel

Teranex VC-3 Rear Panel (BNC AES Connector model)

10.3 Inputs

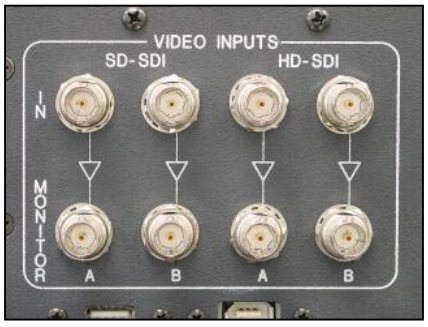
VIDEO INPUTS

2 x BNC - SD-SDI, 10-bit Serial Digital Interface
- Data Rate: 270Mb/s – Rec 601 with embedded audio per SMPTE 272M
- Input Impedance: 75-ohm, unbalanced

2 x BNC - Active monitor outputs for each input

2 x BNC - HD-SDI, 10-bit Serial Digital Interface
- Data Rates: 1.485 Gb/s SMPTE 292-1997 with embedded audio per SMPTE 272M
- Input Impedance: 75-ohm, unbalanced

2 x BNC - Active monitor outputs for each input



AES/EBU AUDIO INPUTS

4 x BNC (as shown) or 4 x XLR inputs (not shown)
- 8-channel

10.4 Outputs

VIDEO OUTPUTS

2 x BNC - SDI, 10-bit Serial Digital Interface
- Data Rate: 270Mb/s – Rec 601 with embedded audio per SMPTE 272M
- Output Impedance: 75-ohm, unbalanced

2 x BNC - HD-SDI, 10-bit Serial Digital Interface
- Data Rates: 1.485 Gb/s SMPTE 292-1997 with embedded audio per SMPTE 272M
- Output Impedance: 75-ohm unbalanced

AES/EBU AUDIO OUTPUTS ***(See illustration above)***

4 x BNC (as shown) or 4 x XLR (not shown)
- 8-channel

10.5 Reference Inputs

Provides Inputs for the unit to be field locked to external reference signals.

ANALOG REFERENCE

1 x BNC for analog Blackburst:
>15K unbalanced, 1 Vp-p (passive loop-thru), Sync Format RS-170A

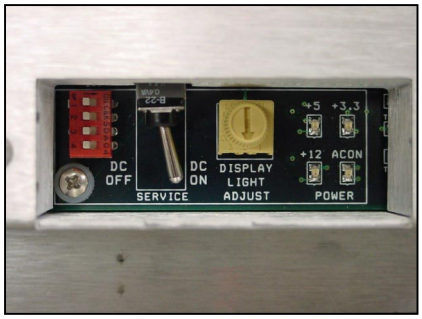
1x BNC for Tri-Level Sync:
75-ohm unbalanced, 1 Vp-p (Active pass-thru)

10.6 Control Ports

USB:	For connection to external USB CDROM drive.
IEEE-1394:	Connected, but no driver is currently installed to support it.
Keyboard/Mouse:	Not functional. Mouse driver is not currently available.
Network:	1x 10/100BaseT Ethernet (RJ-45)
GPI:	3x GPI inputs (25-pin D-style, female) See section 12.8 for more information.
RS-232:	1 x RS-232 (9-Pin D-style, male) ***(Some units require null modem and TTL-to- RS-232 adaptors. Contact Teranex for assistance.)***

10.7 GORGET Board

The GORGET board is mounted inside the front door assembly and faces the user after opening the front of the unit. (See figure at right.)



This board serves multiple functions:

10.7.1 System Configuration Switches

The four switches on the left of the GORGET board are for initial system configuration only:

J1 – 3RU GUI (0 = TFT/Touch, 1= No Touchscreen)
J2 – AES XLR/BNC (0 = XLR, 1 = BNC)
J3 – unused
J4 – production jumper for factory use only

10.7.2 DC Power Service Switch

The DC Power Service Switch allows the user to turn the DC power supplies on and off for purposes of servicing the unit without turning off the AC breaker on the rear panel. The +3.3, +5 and +12-volt LED indicators will illuminate when the Service Switch is turned on. When the Service Switch is turned off, the AC Power LED will remain illuminated as long as the rear panel AC mains circuit breaker is on.

Warning!

When the DC Service Switch is turned off, AC power remains present at the inputs to the DC power supplies and a hazardous condition may exist.

10.7.3 Display Light Adjust

Turn this variable resistor to control the backlight (touchscreen) brightness.

10.7.4 Power Supply Voltage LED's

Four LED's indicate the on/off status of the AC power switch on the rear of the unit and the nominal operation of the +5, +3.3 and +12 volt power supplies.

10.8 System Configuration

Please refer to your shipping documents.

Note - Your system has its own unique Access Key. The Key is dependent on your serial number and system configuration purchased, and cannot be changed without a valid key from Teranex.

10.9 Graphical User Interface (GUI)

10.9.1 Touchscreen Information

The front panel of the unit features an active matrix LCD touch-screen display for easy use. The GUI is a color display with a series of intuitive menu options featuring set up, input, output and processing screens specific to each software application running on the Teranex Video Computer.

Refer to your software application user manual(s) for details of features specific to each application that are accessed via the Graphical User Interface.

10.9.2 Cleaning the Display

To clean the display, wipe with a damp cloth moistened with mild glass cleaner. Do not use a paper towel, which may scratch the screen.

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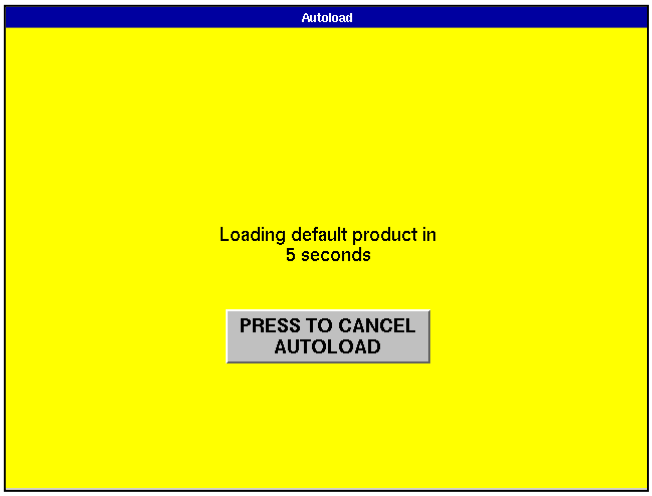
11 START-UP MENU

11.1 Autoload of Default Application

The initial power-on sequence of the Video Computer operating software will Autoload a DEFAULT APPLICATION, or optionally allow the operator to cancel the Autoload (see screen at right) and proceed to the Start-Up menu screen.

If the operator takes no action within 5 seconds of the appearance of the Autoload screen, the software application defined as the default product will automatically be loaded and started.

If the operator cancels the Autoload process, the Start-Up menu will be displayed (see below).

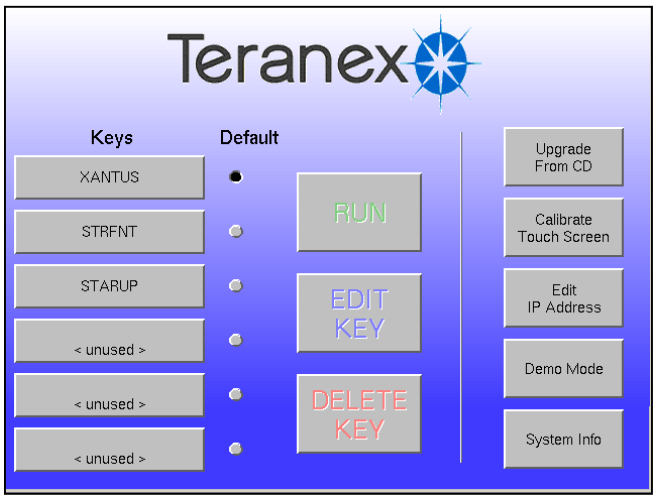


11.2 Start-Up Menu

The Start-Up menu may be accessed by canceling the Autoload sequence (described above), or from the System Setup menu within any software application.

The Start-Up menu offers an intuitive control layout, allowing access to various setup features of the Teranex Video Computer:

- Access Key Entry, Editing & Deletion
- Selection of DEFAULT APPLICATION
- Upgrade of System Software from CD
- Calibration of the GUI Touchscreen
- IP Address Assignment
- Access to Demo Modes
- Interrogation of Video Computer System Information

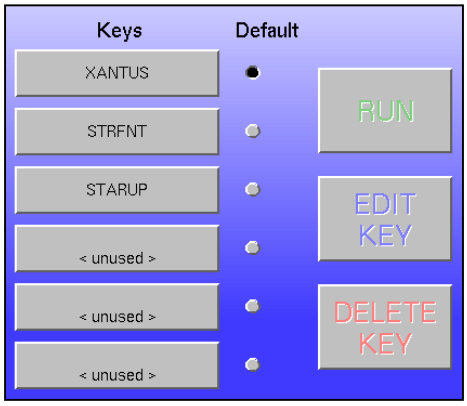


11.3 Access Key Entry, Editing and Deletion

Configuration of the Video Computer is accomplished by entering a 16-digit Access Key, which defines the software package(s) and optional features purchased. Your Access Key can be found in the shipping documents enclosed with your unit.

During our pre-shipment Quality Assurance process, Teranex has entered the appropriate Access Key required for your system configuration. No action should be required by you upon delivery.

The Start-Up menu will store and display up to six (6) Access Keys. The names displayed in each button (see image at right) are user-definable via the Access Key Entry procedure below. Each name may be up to six characters in length.



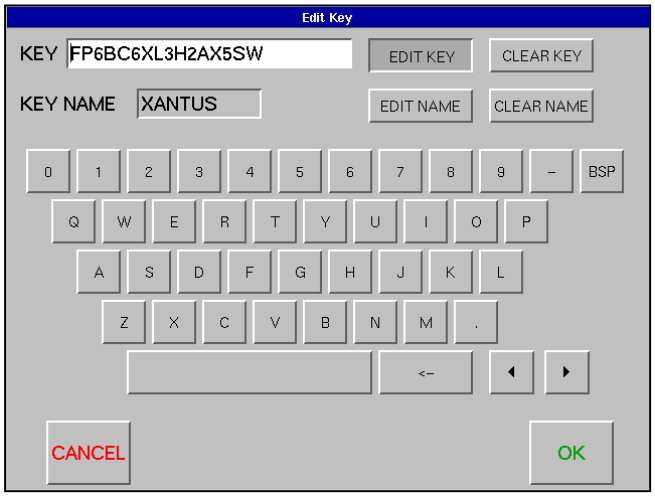
The "Default" key is selected by pressing the circular button next to the desired Access Key button. The default button selected will turn **black**, as shown at right.

When changing the Default key, you will be prompted to confirm your selection.

To invoke a key, press the rectangular button displaying the desired key, and then press *RUN*.

11.3.1 Access Key Entry & Editing

If a new Access Key is required to activate new software packages or features, Teranex will provide it to you. To enter the key, follow these steps:



1. Access the Start-Up menu. From your application's "Splash screen," press the *SYSTEM SETUP* button in lower left area of the main GUI menu, then press the *EXIT* button on the System Setup menu. The Start-Up menu, shown above, will then be displayed.
2. Select one of the six Access Key buttons and press the *EDIT KEY* button, shown above. The "Edit Key" screen, shown at right, will then be displayed.
3. Touch the *CLEAR KEY* button.
4. Using the touchscreen "soft" keyboard, enter the new 16-digit Access Key provided by Teranex. If you make an error during typing, press the *BSP* (backspace) key to erase incorrect characters. You may also use the arrow keys (◀ ▶) to move the cursor to the desired position.
5. Optionally, you may name your Access Keys. With an Access Key displayed that you wish to name, or immediately after entering a new Access Key, press *CLEAR NAME* and then *EDIT NAME*. Using the soft keyboard, enter a name up to 6-characters long. Push *OK*. This will simultaneously **name** the key and return you to the Start-Up menu.

NOTE: If you do not name your keys, they will be named and displayed in the Start-Up menu as KEY1, KEY2, etc., depending on the button position occupied.

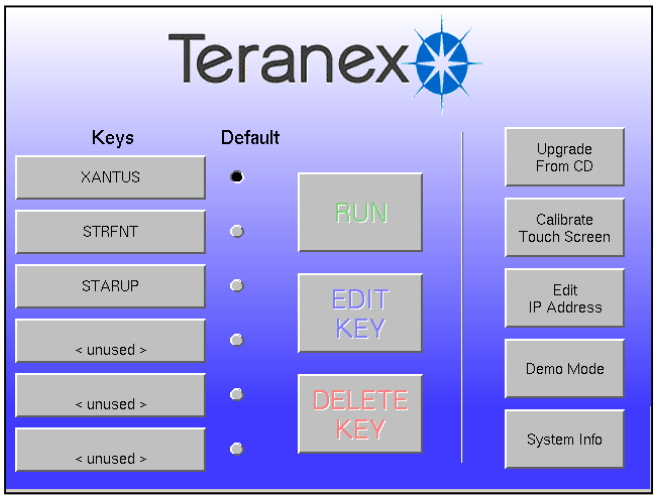
11.3.2 Deleting a Key from the Database

On the Start-Up menu, select the Access Key to be deleted. Press the *DELETE KEY* button. You will be prompted to confirm the deletion. Press *OK* in the prompt window to delete the key, or press *CANCEL* to return to the Start-Up menu.

NOTE: A key designated as the Default Key cannot be deleted. To delete a Default Key, you must first designate a different key as the Default Key. You may then delete the desired key.

11.4 Upgrade from CD

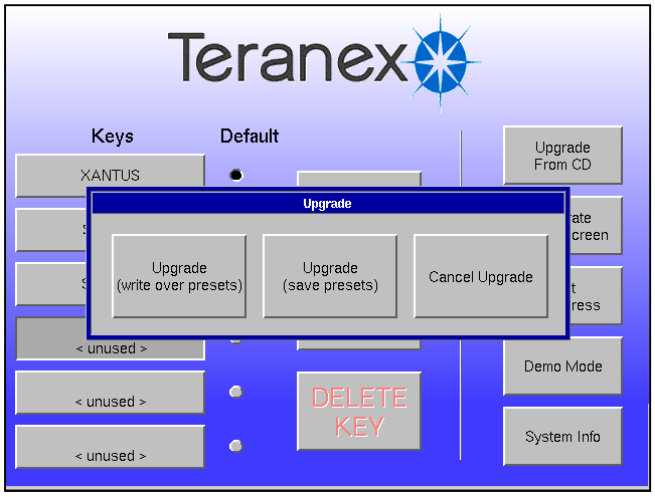
System operating software for Teranex products is distributed via CDROM. The Start-up menu provides access to the "Upgrade from CD" menu.



Caution before beginning: *Be careful that you do NOT interrupt the update process once it has begun, otherwise an UNRECOVERABLE system condition may occur.*

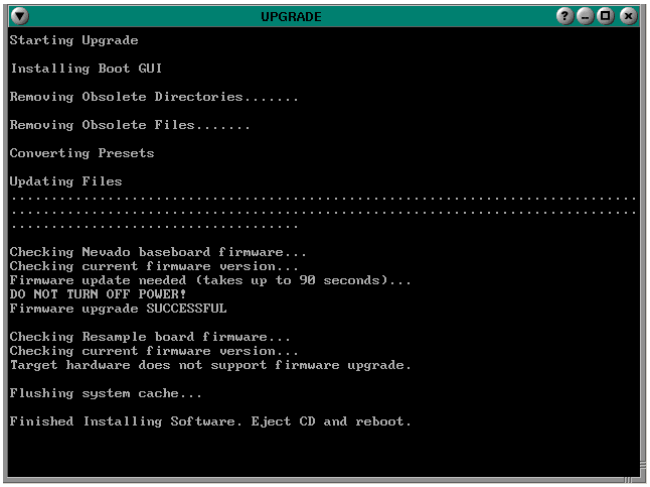
SOFTWARE INSTALLATION:

1) Turn off power to the Video Computer.
2) Connect the supplied external CDROM drive via the USB cable to the USB connector on the rear of the chassis.
3) Turn on power to the Video Computer. Wait for the application software to restart.
4) Place the supplied CD in the external CDROM drive, and gently close it. Wait a few seconds until the LED on the CDROM drive stops flashing.
5) On the touch screen, press the *UPGRADE FROM CD* button (upper right). In the "Upgrade" window, you may choose to overwrite or save your existing presets in the unit.



- Overwriting presets returns the system to factory values
- Saving presets will retain any previous preset values.
- Cancel the upgrade to return to the Start-Up menu.

6) Software installation will now begin.
   - Obsolete Directories and Files will be removed.
   - Files will be updated and verified automatically. During this process, you will observe that dots are displayed across the screen one at a time. This process may take as long a twenty minutes, depending on the number of files being added and verified.



DO NOT TOUCH THE TOUCHSCREEN DURING THIS PROCESS.

7) After the software has installed, you will be prompted to eject the CD and reboot (restart) the unit. Cycle the power via the front service switch inside the front panel or via the AC power switch on the rear of the unit.
8) The system will reboot and the yellow “Autoload” countdown screen will be displayed.
9) If you have been given a new Access Key to activate new features, please cancel the Autoload sequence, and enter the new Access Key now (see Section 11.3.1 above).
10) If you have opened the front panel, close the front panel and tighten the captive screws.

11.5 Calibrate Touch Screen

Opens a calibration screen, which allows the user to calibrate the performance of the touchscreen display. The user is prompted to press target points in each corner and the center of the touchscreen. The user must then CONFIRM the calibration be pressing a box in the center of the touchscreen.

If you feel that recalibration was not performed correctly, wait for the confirmation box to time-out, and then repeat the calibration process.

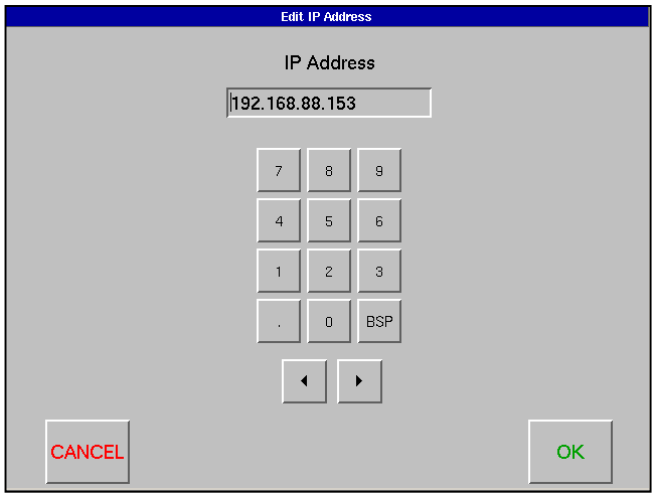
Note: Calibration of the Touch Screen may also be initiated from any software application by choosing this option from the System Setup menu.

11.6 Edit IP Address

Allows the user to set the Ethernet IP address for the unit, and displays the current address. The default factory address is 192.168.88.152. The unit comes standard with an Ethernet port, which allows the unit to be placed on a Local Area Network. This port is used for remote control of the unit. Pressing the Edit IP Address button activates a touchscreen keyboard, permitting entry of a new IP address for this unit.

After entering the new address, press OK to invoke the setting and return to the Start-Up menu.

Press CANCEL to return to the Start-Up menu without modifying the IP address.



11.7 Demo Mode

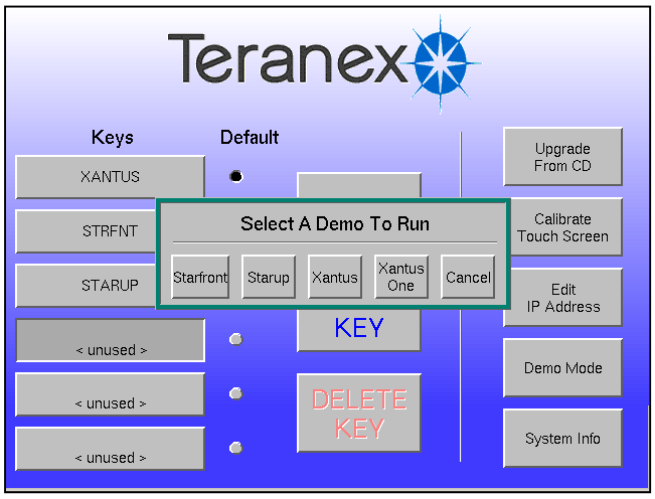
Demo Mode allows the user to enable all options of the unit and to evaluate all current software applications. This mode is very useful in allowing a user to try a processing option before purchasing it.

The output video will drop to black every 5-10 seconds while in Demo Mode.

After pressing the *DEMO MODE* button on the Start-Up menu, a selection menu will be displayed, allowing the user to choose the desired software application:

- Starfront Noise Reduction
- Star-up Upconversion with advanced Noise Reduction
- Xantus Format Conversion
- Xantus-one Upconversion

The user may also press Cancel to return to the Start-Up menu.



TO EXIT DEMO MODE, press *SYSTEM SETUP* then *EXIT* to close the application and return to the Start-Up menu. You may select an Access Key or another demo mode.

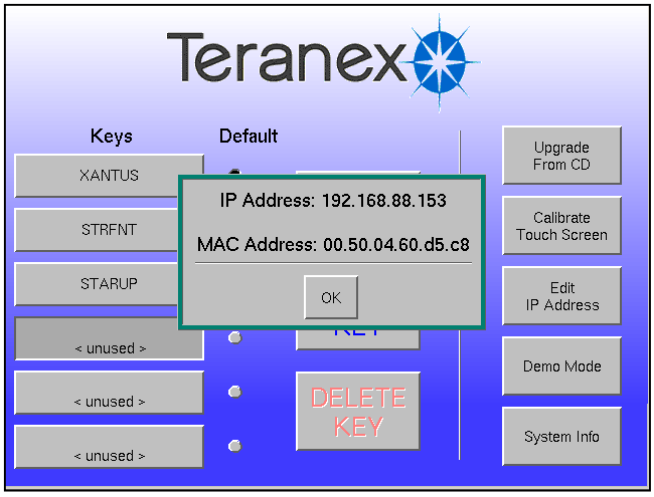
11.8 System Info

Opens a system information window that provides the following information:

- IP Address
- MAC Address (for factory use only)

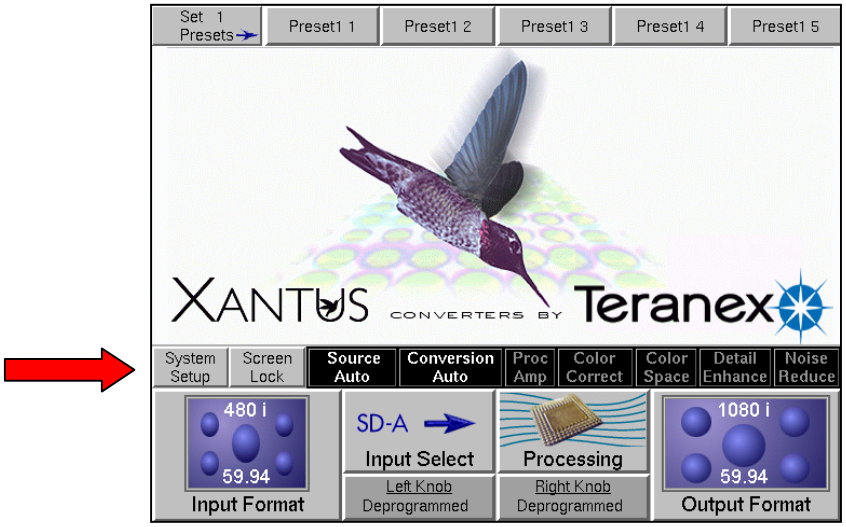
Press OK to close the Info Window.

NOTE: For more detailed System Information, please see section 12.4 of this manual.



12 System Setup Menu

On the Splash Screen of each software application is a button that allows access to a System Setup menu, as shown in the example below.



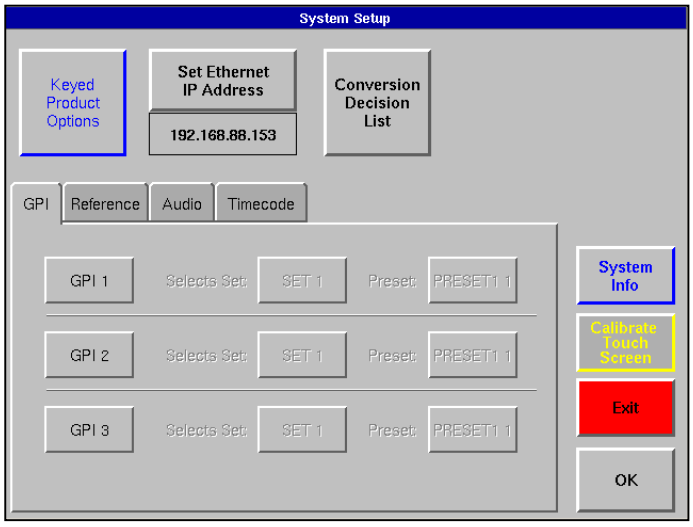
Xantus Splash Screen

Error Indications

The System Setup button above will change color from gray to Yellow or Red, depending on video or audio input errors encountered by the system. Pressing the System Setup button will open the menu below. If error conditions exist, the Reference or Audio tabs will also be colored Yellow or Red. Please refer to the sections below for specific information about each tab.

System Setup Menu

The System Setup menu allows access to the basic parameters of the unit. The information below describes each function of the menu, starting in the upper left and moving clockwise.



System Set-up Menu

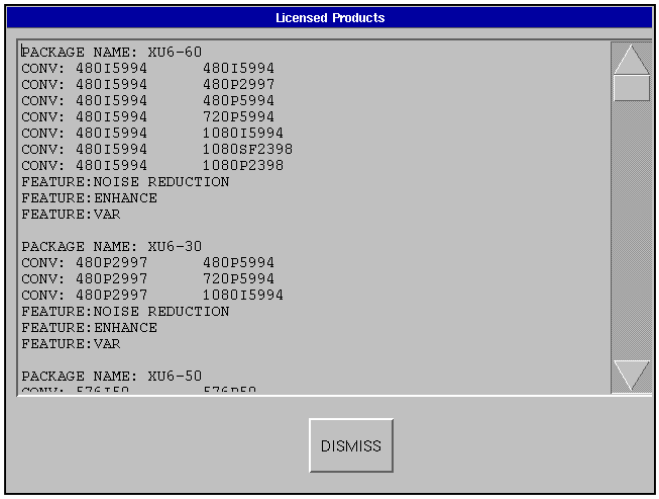
12.1 Keyed Product Options

Opens a window displaying a list of software packages activated by the Access Key.

(See example at right.)

Use the scroll bar at right to scan all packages and conversions in the list.

When finished, press DISMISS to return to the Setup menu.

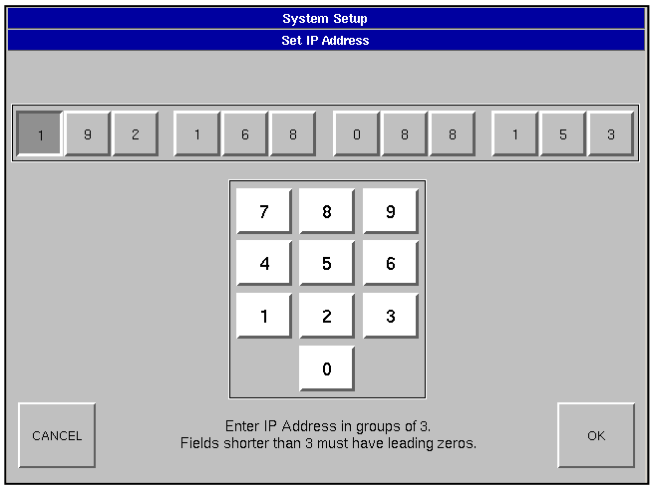


12.2 Set Ethernet IP Address

Allows the user to set the Ethernet IP address for the unit, and displays the current address. The default factory address is 192.168.88.152. The unit comes standard with an Ethernet port, which allows the unit to be placed on a Local Area Network. This port is used for remote control of the unit. Pressing the Edit IP Address button activates a touchscreen keyboard, permitting entry of a new IP address for this unit.

After entering the new address, press OK to invoke the setting and return to the Start-Up menu.

Press CANCEL to return to the Start-Up menu without modifying the IP address.


System Setup
Set IP Address
1 9 2 1 6 8 0 8 8 1 5 3
7 8 9
4 5 6
1 2 3
0
CANCEL
Enter IP Address in groups of 3.
Fields shorter than 3 must have leading zeros.
OK

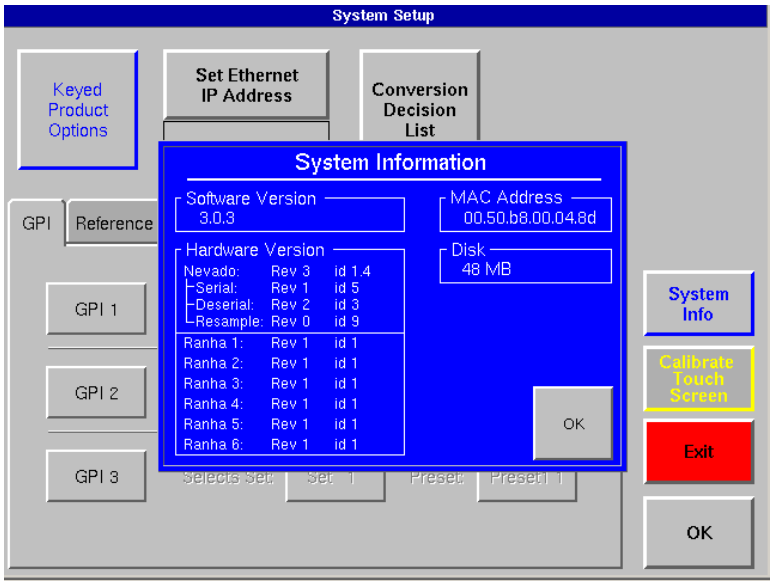
12.3 Conversion Decision List (Optional)

Allows access to the CDL script processor and text editor. See the System Software Applications Manual for details.

12.4 System Info

Opens a system information window that provides the following information:

- Current level of software installed in the operating system
- MAC Address (for factory use only)
- Hardware and software versions of major subassemblies
- Capacity of resident solid-state “disk” (in megabytes)



Press “OK” to close the blue System Information window.

12.5 Calibrate Touch Screen

Opens a calibration screen, which allows the user to calibrate the performance of the touchscreen display. The user is prompted to press target points in each corner and the center of the touchscreen. The user must then confirm the calibration be pressing a box in the center of the touchscreen.

If you suspect that recalibration procedure was not performed correctly, wait for the box to time-out, and repeat the process.

12.6 Exit

Press the red EXIT button to leave the current application and return to the Start-up Screen. See section 11.

12.7 “OK” Button

The “OK” button closes the setup menu and returns you to the “Splash Screen” of the active application.

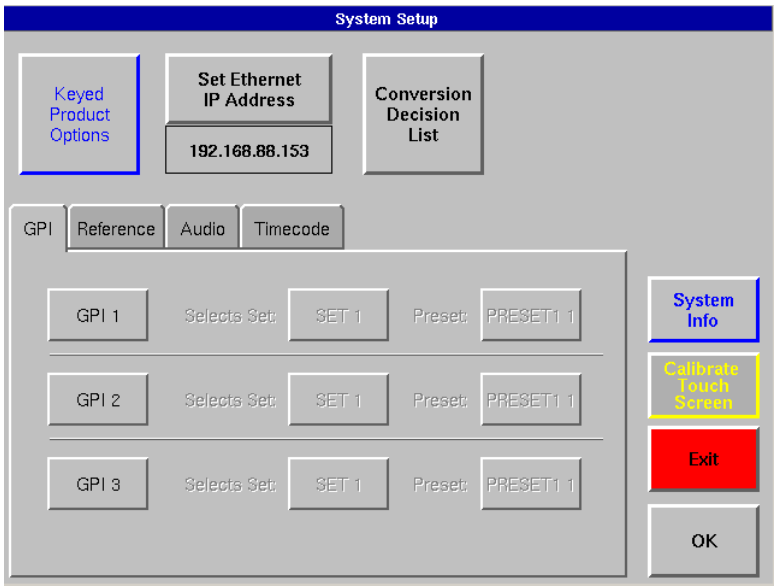
12.8 GPI Setup Tab

The Teranex Video Computer system can receive up to three General Purpose Interface (GPI) triggers to automatically activate specific User Presets. *(For more information on Presets, see Section 13.)*

General Purpose Interface (GPI) Setup:

1. Select the GPI Tab in the System Setup menu (see below)
2. Select the desired GPI button on the touch-screen – **GPI 1, GPI 2 or GPI 3**
3. Select which group of the 8 presets you wish to use (USER 1-8).
4. Select the specific User preset (Preset 1-5) within the group specified in step 3. (See examples below.)

Note: If the user has named the User Groups or Presets, the names will be displayed as appropriate.



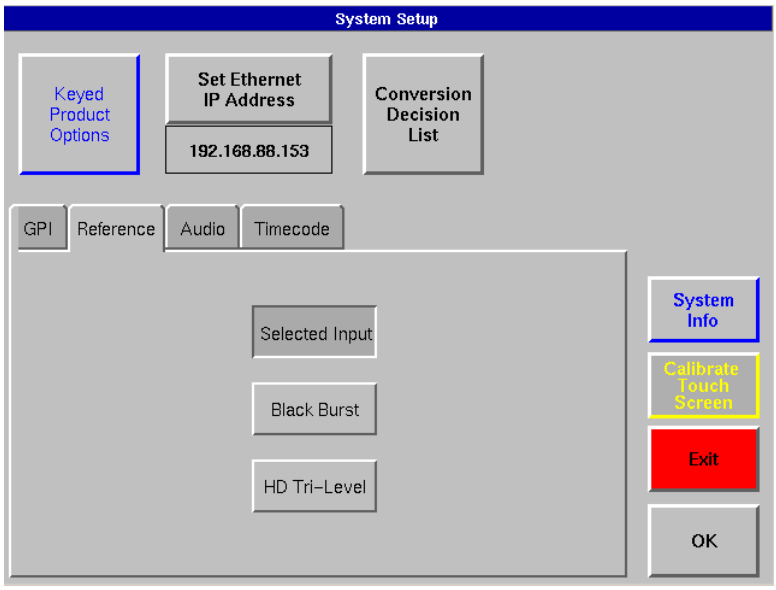
The GPI inputs are held “high” and expect a contact closure to ground to activate the programmed preset. Outputs are at +5VDC normally, and drop to an active “low” when activated. There is a 100ma maximum sink to ground.

Pin-out Designations for 25-pin D-Style Female GPI connector:

PINS	SIGNALS
1	GPI INPUT #1
2	GPI INPUT #2
3	GPI INPUT #3
4 – 13	Not connected
14 – 19	System ground
20 – 25	Not connected

12.9 Reference Tab

This menu allows the user to select the desired output reference source:



- **Selected Input** will reference the unit to the currently selected input.
- **Blackburst** will reference the unit to an external SD analog black burst signal.
- **HD Tri-Level** will reference the unit to an external HD tri-level sync signal.

NOTES:

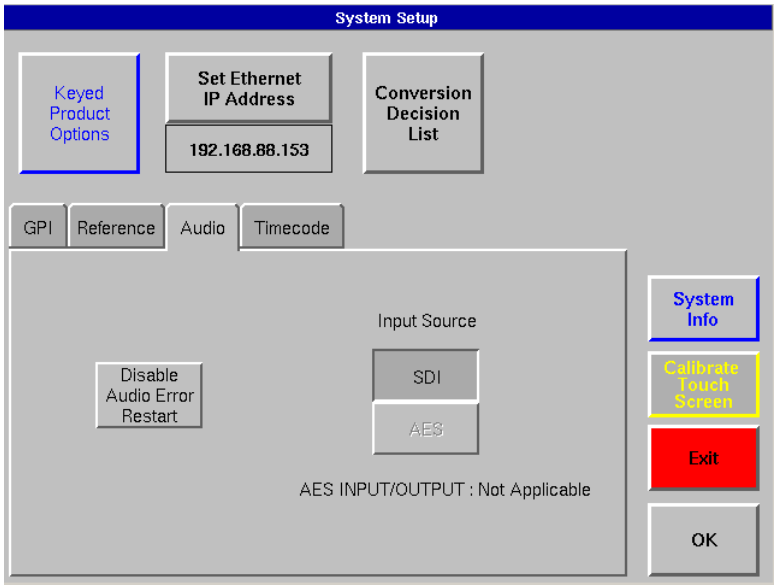
- **The Reference frame rate must match the output frame rate.**
- **Tri-level Sync is invalid when a Standard Definition (SD) output is selected.**

Error Indications:

The color of the Reference Tab will indicate the status of the reference signal.

- GRAY - an input is present and valid.
- YELLOW - the unit has detected an input signal, but it is not valid based on the currently selected input format.
- RED - indicates that no input has been detected.

12.10 Audio Tab



NOTES:

Audio processing is available in systems configured with a Rev. 3 Nevado Input/Output board, or with a Rev. 2 Nevado board with "A" firmware.

The ability to process both timecode and audio simultaneously requires the use of a Rev. 3 Nevado Input/Output board. Contact Teranex or your sales manager for further details.

Error Indications:
The color of the Audio Tab will indicate the status of the audio signal.

- GRAY - an input is present and valid.
- YELLOW - the unit has detected an input signal, but it is not valid based on the currently selected input format.
- RED - indicates that an error in the AES audio has been detected.

12.10.1 Disable Audio Error Restart

This button will only be visible if the VC-3 Video Computer is fitted with a Rev 3 Nevado Input/Output board, or a Rev. 2 Nevado board fitted with embedded Audio delay handling firmware.

Functional Description:

If there is an error in the embedded audio stream of the incoming signal, or if one or more of the audio channels is blank, the Video Computer will typically reinitialize the conversion application in an attempt to recover from this error. This re-initialization will have an adverse effect on the video output of the unit as well.

The "**Disable Audio Error"** function allows the Video Computer to ignore the audio error and process both signals as if no errors were present. The quality of the embedded audio may not be optimal, depending on the nature of the input error. The Disable Audio Error Restart button simply instructs the Video Computer to ignore any errors present.

12.10.2 Input Source – SDI or AES

In the VC-3 (3RU) chassis, the Audio menu permits AES audio input via the SDI inputs or discrete AES inputs when a Nevado Rev. 3 Input/Output board is installed. When a Nevado Rev. 2 board is present, only embedded audio inputs via the SDI video input are available, and the *AES* button will not be selectable.

12.10.2.1 "SDI" – Embedded Digital Audio Processing and Delay

Embedded digital audio processing and delay have been implemented in all conversions.

With a Rev. 2 Nevado I/O Board -
The Rev 2 Nevado board will allow for 2 AES channels (1 Group) to be passed through as embedded audio.

With a Rev. 3 Nevado I/O Board -
The Rev 3 Nevado board will allow for 4 AES channels (2 Groups) to be passed through as embedded audio.

12.10.2.2 AES Discrete Audio Processing and Delay

Discrete digital audio input processing and delay have been implemented in all conversions in 3RU systems fitted with a Rev. 3 Nevado Input/Output board.

The Rev. 3 Nevado board will support discrete audio inputs and outputs. The user may connect up to 4 AES channels via XLR or BNC connectors, depending on the chassis configuration ordered.

Regardless of the audio input selected, audio will be output via both embedded (SDI) and discrete audio outputs.

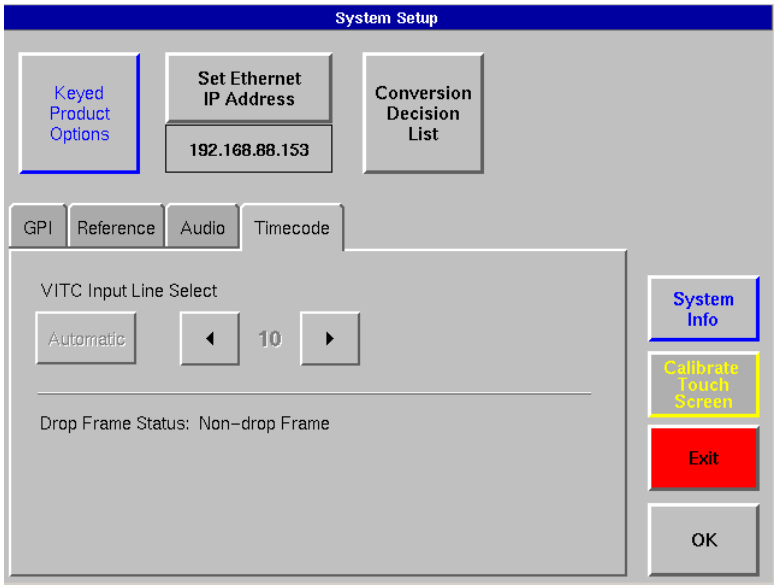
12.11 Timecode Tab

Timecode translation has been implemented in all format conversions. The timecode menu allows the user to select between automatic detection and user specified VITC input line selection.

NOTES:

Timecode processing is available in systems configured with a Rev. 3 Nevado Input/Output board, or with a Rev. 2 Nevado board with "T" firmware.

The ability to process both timecode and audio simultaneously requires the use of a Rev. 3 Nevado Input/Output board. Contact Teranex or your sales manager for further details.



Automatic Detection

In automatic mode, the video computer will look at lines 10 - 20 in the vertical interval to see if it can detect a valid timecode signal. An indication is present on the menu to show whether the incoming timecode is drop frame or non-drop frame.

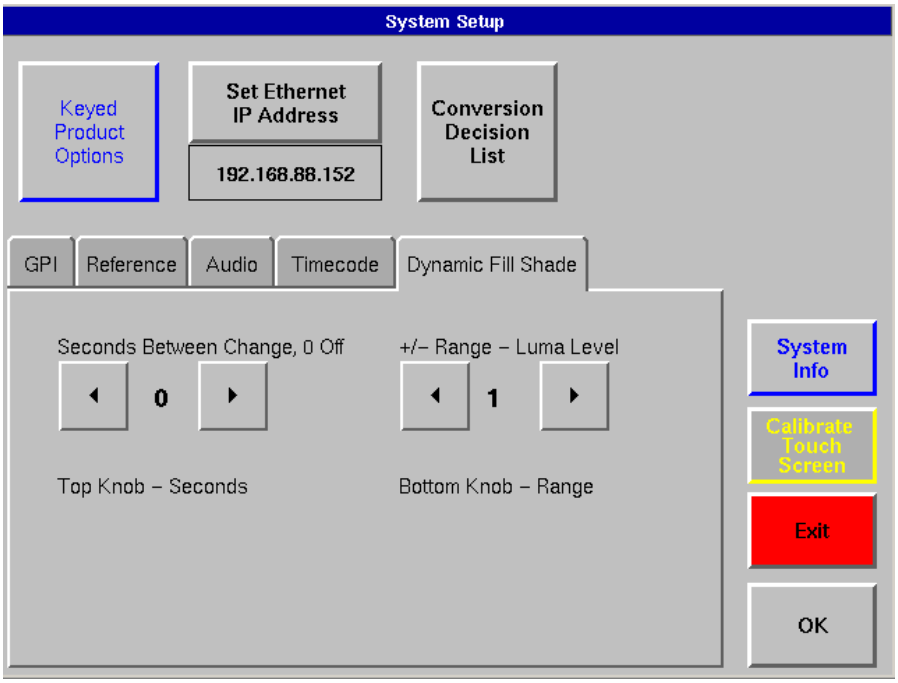
User Defined

In manual mode, the user must select the line on which the timecode will be located. The GUI allows the user to select lines 10 - 20. An indication is present on the menu to show whether the incoming timecode is drop frame or non-drop frame.

NOTE: *The ability to have both timecode and audio handling requires the use of a Revision 3 Nevado Input/Output board. Contact Teranex or your sales manager for further details*

12.12 Dynamic Fill Shade Tab

Dynamic Fill Shade allows the user to program a variation of the luminance level of the Fill Shade, according to range and time parameters set by the user on this tab. This function may be used to help prevent screen "burn-in" when images in pillarbox or letterbox modes are viewed for extended periods of time. (The Fill Shade control is available under the Aspect Menu. See the software application section of this manual.)



Note: *The Top and Bottom front-panel knobs are automatically assigned to the two user parameters described below to facilitate adjustment.*

USER PARAMETERS:

Seconds Between Change – This setting determines the amount of time, in seconds, between each luma value change. The maximum time period is 60 seconds. A value of zero turns off this function.

Pressing the arrows will increment or decrement the value of this parameter. The Top front-panel knob is automatically assigned to this function to permit easy adjustment.

+/- Range – Luma Level – This variable defines the number of luma values to be added and subtracted from the current luma fill shade value. For example, if the current luma fill shade is set to 250 and the Range is set to 10, then the fill shade will change over time from 240 to 260 in one-luma-value increments. The minimum value of this range is 1, and the maximum value is 100.

Note: *The legal limits for digital luma values of 64 and 940 are observed and will not be exceeded, regardless of the value entered for the range.*

Pressing the arrows will increment or decrement the value of this parameter. The Bottom front-panel knob is automatically assigned to this function to permit easy adjustment.

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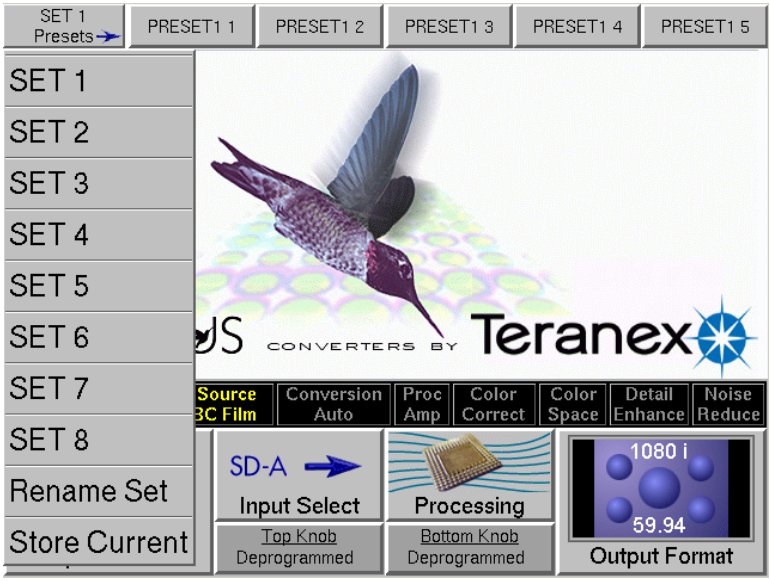
13 User Presets

13.1 Storing Current Configuration

The Video Computer's current operating parameters can be saved into memory by using the **"Store Current"** function of the SET menu. *It is important to save the current settings using this procedure if the user desires the unit to restore the current settings after power failure or system restart.*

To Store the Current Settings and Configuration:

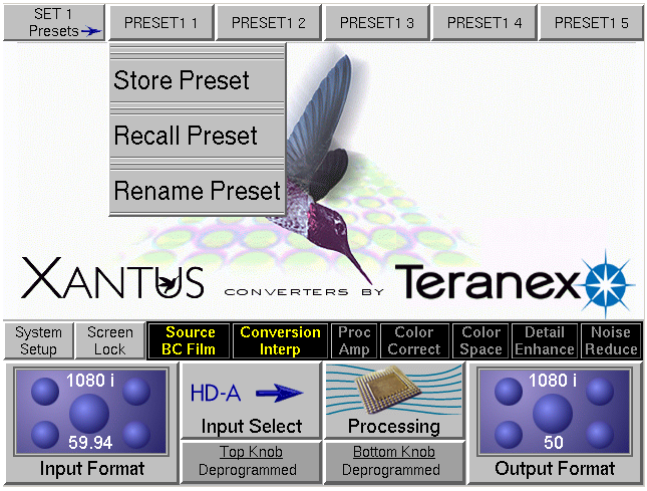
1. Press the gray **"Set"** button at the top left of the display to open the pull down User Set menu. (See illustration below.)
2. At the bottom of the User Set pick list, press the button labeled **"Store Current"** to save the current Video Computer configuration.
3. The current configuration will now be restored if power is turned off or if power is accidentally lost to the unit.



User SET Menu

13.2 Save, Recall or Rename a Preset

To access the User Presets, press the Presets button (top left). Pressing the button will expose a list of 8 User groups. Each group has five user definable presets, yielding a total of 40 user presets.



User Preset Menu

To Save a User Preset:

1. Press the Set button at the top left of the display to open the pull down User Set list.
2. Select the Set from 1 - 8 into which you would like to save the current configuration.
3. Select the specific User Preset button (1 - 5) to which you'd like to save the current configuration. A pull down menu will be displayed (see above) with the options to Store, Recall or Rename the selected preset button.
4. Select **Save.**

To Recall a User Preset:

1. Press the Set button at the top left of the display to open the pull down User Set list.
2. Select the Set from 1-8 from which you would like to recall a configuration.
3. Select the specific User Preset button (1 - 5) that holds the configuration you would like to recall. A pull down menu will be displayed (see above) with the options to Store, Recall or Rename the selected preset button.
4. Select **Recall**.

To Rename a User Preset:

1. Press the Set button at the top left of the display to open the pull down User Set list.
2. Select the Set from 1-8, which you would like to rename.
3. Select the User Preset button (1 - 5), which you would like to rename. A pull down menu will be displayed (see above) with the options to Store, Recall or Rename the selected preset button.
4. Select **Rename**.
5. Using the keyboard option, type in the new name for the Preset button and press "OK".

To Rename a User Set:

1. Press the Set button at the top left of the display to open the pull down User Set list.
2. Select the Set from 1-8 that you'd like to rename. This makes the set that you'd like to rename the active Set.
3. Again, press the Set button at the top left of the display to open the pull down User Set list.
4. Select **Rename**.
5. Using the keyboard option, type in the new name for the Set button and press "OK."